Subpart R—CRABI 12-Month-Old Infant, Alpha Version

SOURCE: 65 FR 17188, Mar. 31, 2000, unless otherwise noted.

§572.150 Incorporation by reference.

(a) The following materials are incorporated by reference in this subpart R.

(1) A drawings and specifications package entitled ''Parts List and Drawings, Subpart R, CRABI 12-Month-Old Infant Crash Test Dummy (CRABI–12, Alpha version) August 2001'' and consisting of:

(i) Drawing No. 921022–001, Head Assembly, incorporated by reference in §§572.151, 572.152, 572.154, and 572.155;

(ii) Drawing No. 921022–041, Neck Assembly, incorporated by reference in §§572.151, 572.153, 572.154, and 572.155;

(iii) Drawing No. TE–3200–160, Headform, incorporated by reference in §§572.151 and 572.153;

(iv) Drawing No. 921022–060, Torso Assembly, incorporated by reference in §§572.151, 572.154, and 572.155;

(v) Drawing No. 921022–055, Leg Assembly, incorporated by reference in §§572.151, and 572.155 as part of a complete dummy assembly;

(vi) Drawing No. 921022–054, Arm Assembly, incorporated by reference in §§572.151, and 572.155 as part of the complete dummy assembly;

(2) A procedures manual entitled ''Procedures for Assembly, Disassembly and Inspection (PADI) Subpart R, CRABI 12-Month-Old Infant Crash Test Dummy (CRABI–12, Alpha version) August 2001'' incorporated by reference in §572.155;

(3) SAE Recommended Practice J211/1, Rev. Mar95 ''Instrumentation for Impact Tests—Part 1—Electronic Instrumentation'', incorporated by reference in §572.155;

(4) SAE J1733 1994–12 ''Sign Convention for Vehicle Crash Testing'', incorporated by reference in §572.155.

(b) The Director of the Federal Register approved those materials incorporated by reference in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies of the materials may be inspected at NHTSA's Docket Section, 400 Seventh Street S.W., room 5109, Washington, DC, or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202–741–6030, or go to: *http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.*

(c) The incorporated materials are available as follows:

(1) The drawings and specifications package referred to in paragraph (a)(1) of this section and the procedures manual referred to in paragraph (a)(2) of this section are available from Reprographic Technologies, 9000 Virginia Manor Road, Beltsville, MD 20705 (301) 419–5070.

(2) The SAE materials referred to paragraphs (a)(3) and (a)(4) of this section are available from the Society of Automotive Engineers, Inc., 400 Commonwealth Drive, Warrendale, PA 15096.

[65 FR 17188, Mar. 31, 2000, as amended at 66 FR 45784, Aug. 30, 2001]

§572.151 General description.

(a) The 12-month-old-infant crash test dummy is described by drawings and specifications containing the following materials:

(1) Technical drawings and specifications package 921022–000 (refer to §572.150(a)(1)), the titles of which are listed in Table A of this section;

(2) Procedures for Assembly, Disassembly and Inspection document (PADI) (refer to §572.150(a)(2)).

(b) The dummy consists of the component assemblies set out in the following Table A:

TABLE A

Component assembly	Drawing number
Head Assembly	921022–001.
Neck Assembly (complete)	921022–041.
Torso Assembly	921022–060.
Leg Assembly	921022–055 R&L.
Arm Assembly	921022–054 R&L.

(c) Adjacent segments of the dummy are joined in a manner such that, except for contacts existing under static conditions, there is no contact between metallic elements throughout the range of motion or under simulated crash impact conditions.

(d) The structural properties of the dummy are such that the dummy shall

conform to this Subpart in every respect before its use in any test under this chapter.

§ 572.152 Head assembly and test procedure.

(a) The head assembly (refer to § 572.150(a)(1)(i)) for this test consists of the assembly (drawing 921022–001), triaxial mount block (SA572–80), and 3 accelerometers (drawing SA572–S4).

(b) *Frontal and rear impact.* (1) Frontal impact. When the head assembly in paragraph (a) of this section is dropped from a height of 376.0 ±1.0 mm (14.8 ±0.04 in) in accordance with paragraph (c)(3)(i) of this section, the peak resultant acceleration measured at the head CG shall not be less than 100 g or more than 120 g. The resultant acceleration vs. time history curve shall be unimodal, and the oscillations occurring after the main pulse shall be less than 17 percent of the peak resultant acceleration. The lateral acceleration shall not exceed ±15 g's.

(2) *Rear impact.* When the head assembly in paragraph (a) of this section is dropped from a height of 376.0 ±1.0 mm (14.8 ±0.04 in) in accordance with paragraph (c)(3)(ii) of this section, the peak resultant acceleration measured at the head CG shall be not less than 55 g and not more than 71 g. The resultant acceleration vs. time history curve shall be unimodal, and the oscillations occurring after the main pulse shall be less than 17 percent of the peak resultant acceleration. The lateral acceleration shall not exceed ±15 g's.

(c) *Head test procedure.* The test procedure for the head is as follows:

(1) Soak the head assembly in a controlled environment at any temperature between 18.9 and 25.6 °C (66 and 78 °F) and at any relative humidity between 10 and 70 percent for at least four hours prior to a test. These temperature and humidity levels shall be maintained throughout the entire testing period specified in this section.

(2) Before the test, clean the impact surface of the head skin and the steel impact plate surface with isopropyl alcohol, trichlorethane, or an equivalent. Both impact surfaces shall be clean and dry for testing.

(3)(i) For a frontal impact test, suspend the head assembly with its midsagittal plane in vertical orientation as shown in Figure R1 of this subpart. The lowest point on the forehead is 376.0 ±1.0 mm (14.8 ±0.04 in) from the impact surface. The 3.30 mm (0.13 in) diameter holes located on either side of the dummy's head are used to ensure that the head is level with respect to the impact surface. The angle between the lower surface plane of the neck transducer mass simulator (drawing 910420–003) and the plane of the impact surface is 45 ±1 degrees.

(ii) For a rear impact test, suspend the head assembly with its midsagittal plane in vertical orientation as shown in Figure R2 of this subpart. The lowest point on the back of the head is 376.0 ±1.0 mm (14.8 ±0.04 in) from the impact surface. The 3.30 mm (0.13 in) diameter holes located on either side of the dummy's head are used to ensure that the head is level with respect to the impact surface. The angle between the lower surface plane of the neck transducer structural replacement (drawing 910420–003) and the impact surface is 90 ±1 degrees.

(4) Drop the head assembly from the specified height by a means that ensures a smooth, instant release onto a rigidly supported flat horizontal steel plate which is 50.8 mm (2 in) thick and 610 mm (24 in) square. The impact surface shall be clean, dry and have a micro finish of not less than 203.2×10^{-6} mm (8 micro inches) (RMS) and not more than 2032.0×10^{-6} mm (80 micro inches) (RMS).

(5) Allow at least 2 hours between successive tests of the head assembly at the same impact point. For head impacts on the opposite side of the head, the 30-minute waiting period specified in § 572.155(m) does not apply.

§ 572.153 Neck-headform assembly and test procedure.

(a) The neck and headform assembly (refer to §§ 572.150(a)(1)(ii) and 572.150(a)(1)(iii)) for the purposes of this test consists of parts shown in CRABI neck test assembly (drawing TE–3200–100);

(b) When the neck and headform assembly, as defined in § 572.153(a), is tested according to the test procedure in § 572.153(c), it shall have the following characteristics: